

# ***Scope***

## ***Connections II***



### **Telephone Interface**

### **User Manual**

### Overview

**IMPORTANT!** This unit must not under any circumstances be connected direct to the public telephone network. It is only intended for indirect connection to an in-house telephone exchange. Any attempt to operate the unit other than as intended will invalidate all equipment warranties and may result in damage to the equipment, the telephone network or both.

The Scope digital paging interface can be used to transmit text or numeric messages from any internal telephone on your exchange, direct to the pocket of the individual being paged. There are two types of interface available, these cover most types of hybrid and PBX systems with DTMF capability. These can be supplied in two basic configurations:

1) **LP:** For connection to hybrid systems that use 4 wire telephones and their own proprietary digital signaling protocol. This interface connects to an external trunk/line port and is supplied with a power supply to provide the required voltage to the port. This unit will work with any telephone system that can send DTMF to the assigned port, without receiving a dial tone.

2) **MF:** This interface is only intended for use with systems dedicated to two wire ports. Access is gained by dialing the extension number, the ringing will alert the system which will pick up the line. Use of this interface with hybrids that employ their own digital protocol as opposed to DTMF is not recommended and we cannot provide any support for such applications! Also note that some DTMF exchanges are fully compatible except for the reception console. In such cases, a separate extension 2 wire port will be required at reception for data entry.

Both of these interfaces contain line voltage isolation devices. There is total electrical isolation between the paging logic and power supply, and the PBX side of the apparatus.

### Installation:

The Telephone Paging Interface is pre-installed in your ConneXions transmitter. Installation is therefore limited to plugging in the lead supplied into the appropriate socket, as detailed below.

**LP** interface: use the lead provided to plug into an external line port on the exchange. The telephone exchange must then be programmed such that this line port is not automatically selected when requesting an external line, but the internal extensions can select this line port either by way of a pre-programmed feature button or by dialing a discrete code. This system will work with all exchanges which will accept that the line port is active from the correct line voltage being present. It will not work where the exchange requires the line port to receive dial tones.

**MF** interface: use the lead provided to plug into a standard 2 wire extension socket (as for any internal telephone). Make a note of the extension number, which will be needed for dialing into the system.

**Audio Gain:** if there is no response from the system after keying in a number (i.e. no acceptance or rejection tone), you may need to increase the audio input gain. This is achieved by selecting additional switches on the switch bank marked "SW1 Audio Gain" on the PABX MK2 printed circuit board - sliding any of the switches to the "ON" position will increase the gain i.e. the more switches selected, the higher the gain.

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**WARNING !** Ensure mains power is isolated from the ConneXions transmitter BEFORE removing the cover to access the switches.

**Note: see the manual supplied with the Transmitter for full system installation details.**

**Operating Parameters:**

When the system leaves the factory it will have been programmed with a default configuration which sets up the system as follows:

<b>System Base Identity</b>	Refer to order documentation
<b>Time before Sign On Tones</b>	(1.5 secs)
<b>Inactivity Timeout</b>	(10 secs)
<b>Default Beep for all Pager types</b>	(A)
<b>Programming Password</b>	(72765)
<b>Pager Ranges</b>	(To suit equipment supplied)

Values in brackets are the factory defaults.

The system parameters can be changed and re-programmed via any telephone, although we suggest that you experiment with your system prior to re-programming. We also suggest that you use a telephone equipped with an LCD display when undertaking this task.

Your system will have been programmed to be fully functional before leaving the factory there is no need to re-program anything if you are happy with the above values (see section: **Programming from the Phone** for further details).

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**Note: in the following pages describing the operation and programming of the system, the symbol\*is used to denote the STAR key on your telephone, which must be pressed wherever the \* symbol appears in the text. On some telephone systems, the # key can be used instead and may be preferable in some instances. It is advisable to check ALL types of phone used on your exchange to decide which key works best with each phone type.**

## Using the System: Tone Only Pagers

### STEP 1: Connect to the System

Dial paging system extension (MF version) or line port (LP version)

Wait for sign-on tones (3 notes escalating low to high)

### STEP 2: Enter Pager No. (or Group No.) to be called

Enter Pager No. followed by \* (or # see page 2)

Wait for acceptance tone (single mid tone)

### STEP 3: Select Beep Type A =1, B=2, C=3, OR D=4

Enter (1,2,3, or 4) followed by \* (or # see page 2)

Wait for sign-off tones(4 notes: low, high, low, high)

Replace handset

Note: Rejected data is indicated by a single low beep. Re-enter data from STEP 2 or replace handset, wait for time-out and start again.

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## Using the System: Numeric Pagers

### STEP 1:- Connect to the System

Dial paging system extension (MF version) or line port (LP version)

Wait for sign-on tones (3 notes escalating low to high)

### STEP 2: Enter Pager No. (or Group No.) to be called

Enter Pager No. followed by \* (or # see page 2)

Wait for acceptance tone (single mid tone)

### STEP 3: Enter numeric message to be sent

Enter numeric message (max 20 digits) followed by \* (or # see page 2)

Wait for sign-off tones(4 notes: low, high, low, high)

Replace handset

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**Note:** Rejected data is indicated by a single low beep. Re-enter data from STEP 2 or replace handset, wait for time-out and start again.

### Using the System: Alphanumeric Pagers

#### STEP 1: Connect to the System

Dial paging system extension (MF version) or line port (LP version)

Wait for sign-on tones (3 notes escalating low to high)

#### STEP 2: Enter Pager No. (or Group No.) to be called

Enter (Pager No.) followed by \*\* (or # see page 2)

Wait for acceptance tone (single mid tone)

#### STEP 3: Send alphanumeric message.

Select one of the pre-programmed messages from the table supplied with your system.

Enter \* (message no.) \* (or # see page 2)

Wait for sign-off tones(4 notes: low, high, low, high)

Replace handset

Note! a numeric message can also be sent to an alphanumeric pager by following the message sequence for a numeric pager. A group call cannot however contain messages for mixed pager types.

**STEP 3A: Send Alphanumeric message with embedded numeric message**

Where a pre-programmed message has a ~ symbol shown within the message, a number can be added at this point (up to 20 digits) e.g. "Call room number ~".

To achieve this, proceed as in Step 1 and 2 above, then as follows:

Enter \* (message no.) \* (or # see page 2)

Wait for prompt tone (2 short high tones)

Enter (numeric message) \* (up to 20 digits)

Wait for sign-off tones(4 notes: low, high, low, high)

Replace handset

Rejected data is indicated by a single low beep. Re-enter data from STEP 2 or replace handset, wait for time-out and start again.

## Advanced Features

When proficient at using the system, you can speed up your paging by not waiting for the prompt tones, simply enter the pager number \* message \* and listen for the sign off tones. If you replace the handset prior to hearing the sign off tones the page will be aborted.

It is possible to send the page without waiting for the sign on tones, this may well require the delay before sending the sign on tones to be lengthened (see programming section on 'SET TIME BEFORE SIGN-ON TONES' ). To achieve this facility you must send valid DTMF tones to be received by the system before the sign-on tones are generated. It is therefore possible to extend the sign-on delay past the inactivity timer, which effectively means that the sign-on tones will never be received.

## Speed Dialing

It may be possible to effect some speed dial functions with your telephone system, however telephone exchanges vary as to the way in which they perform depending upon their own internal protocol. With certain systems you may have to establish an audio connection with the port prior to sending the message. With other systems it may be possible to program pauses between accessing the port, sending the pager number and sending the message. If this is possible it will be necessary to extend the 'TIME BEFORE SIGN-ON TONES' to allow valid data to be sent before receiving the sign-on tones.

## Tone Only Paging

Numeric & alphanumeric pagers can receive tone only calls by entering \* in place of the message.

## Programming from the Phone.

The Programming menu is accessed by entering the password. The values are held within battery-backed memory to protect them in the event of mains failure. The adjustable parameters are detailed below:

Code No.	Function
1	Number of rings before answer (MF version only, range = 1-9. For LP, set to 1)
2	Time before sign on tones (unit = 0.1 secs, range = 1-99)
3	Set default beep type (A,B,C,D)
4	Inactivity Timeout (unit = 1 sec, range = 2-99)
5	Set Password (up to 6 digits, any combination 0 thru' 9)
7	Set the range for each pager type (Tone, Numeric, Alphanumeric)
8	Set Transmitter Base Identity

Note! It is very helpful to write down the sequence that you wish to program before you start, this will greatly reduce the possibility of error!

**Programming Procedure (note: \* may be substituted with # see page 2)**

**Code 1: Set number of rings before answer (MF version only)**

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter \*\*72765\* (any delay in between sending \*\* and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 1 followed by \* (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter (1-9) followed by \* (the number of rings you require before answering)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

**Code 2: Set Sign On Inhibit Time**

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter \*\*72765\* (any delay in between sending \*\* and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 2 followed by \* (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter (1-99) followed by \* (the sign on tone delay. Unit = 0.1 sec, range = 1-99)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

The Sign On Inhibit Time is adjustable because some systems take longer than others to establish an audio connection. If your system sometimes cuts these sign-on tones short extend the sign-on delay. If you wait too long for the tones, shorten the delay.

**Code 3: Set Default Beep Type**

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter \*\*72765\* (any delay in between sending \*\* and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 3 followed by \* (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter (1-4) followed by \* (the default beep. 1 = A, 2 = B, 3 = C, 4 = D)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

♦ an incorrect parameter value entry will be indicated by a dual low tone to signify rejection. Re-enter the data from this point and wait for the acceptance tones. Alternatively, replace the handset, wait 30 seconds, then re-enter from the beginning.

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### Code 4: Set Inactivity Time-out

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter **\*\*72765\*** (any delay in between sending **\*\*** and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 4 followed by **\*** (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter (2-99) followed by **\*** (the time-out period. Unit = 1 sec. Range = 2-99)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

This is used so that the minimum of time is wasted before the telephone line is dropped through inactivity. This function works with all 2 wire PBX systems and some Hybrids. In some instances, the Hybrid system will only drop the line upon a time-out generated by its own exchange. If this time-out exceeds that set by the paging system, you have no choice but to wait.

### Code 5: Set New Password

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter **\*\*72765\*** (any delay in between sending **\*\*** and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 5 followed by **\*** (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter password then **\*** (1-6 digits in length, any combination of 1-9)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

### Code 7: Set Range for each Pager Type

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter **\*\*72765\*** (any delay in between sending **\*\*** and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 7 followed by **\*** (this is the Code No. of the function you wish to change) ♦  
Wait for tone (single High tone)  
Enter (1-3) followed by **\*** (1 = Alphanumeric, 2 = Numeric, 3 = Tone Only)  
Wait for tone (single High tone)  
Enter Low No. followed by **\*** (the lowest no. pager in the range for the above pager type)  
Wait for tone (single High tone)  
Enter High No. followed by **\*** (the highest no. pager in the range for the above pager type)  
Wait for acceptance tones (4 notes: mid, low, mid, high)

Replace handset

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Pagers can be set within the range 0 -9999. If using only one pager type, set the range for the others to zero. Gaps within the range are acceptable, overlapping groups are illegal.

- ◆ an incorrect parameter value entry will be indicated by a dual low tone to signify rejection. Re-enter the data from this point and wait for the acceptance tones. Alternatively, replace the handset, wait 30 seconds, then re-enter from the beginning.

### Code 8: Set Transmitter Base Identity

Dial paging system extension (MF version)  
Wait for sign-on tones (3 notes escalating low to high)  
Enter \*\*72765\* (any delay in between sending \*\* and password will result in a further confidence tone)  
Wait for menu tones (High, Low, High)  
Enter 8 followed by \* (this is the Code No. of the function you wish to change) ◆  
Wait for tone (single High tone)  
Enter Base No. followed by \* (in the range 0-2000,000)  
Wait for acceptance tones (4 notes: mid, low, mid, high)  
Replace handset

### WARNING ! Do not change this no. without consultation with your dealer

- ◆ an incorrect parameter value entry will be indicated by a dual low tone to signify rejection. Re-enter the data from this point and wait for the acceptance tones. Alternatively, replace the handset, wait 30 seconds, then re-enter from the beginning.

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## Service Information

If you experience a problem with your equipment, please contact the distributor from whom it was purchased. In any event, ensure you have the systems details at hand for reference purposes.

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